US and allied airmen would have their hands full with the ever increasing might of the Warsaw Pact.

If war came to Europe, events would unfold rapidly. NATO’s ground defenses are situated near the inter-German border, and only about fifteen minutes of flying time separates the forward elements of the opposing air forces.

Warsaw Pact doctrine, dictated by the Soviet Union, emphasizes surprise and quick victory.

In the first crucial hours of conflict, echelons of armor-intensive ground forces would hammer NATO’s forward defenses while wave after wave of tactical aircraft would seek control of the skies and destruction of NATO air defenses, air bases, and command and control centers.

Even after reinforcements began arriving from the United States, allied airpower would have its hands full. It would have to establish air superiority, keep enemy fighters off the backs of friendly forces, and also help defeat the ground assault. The opening battle over the continent, though, would be in the hands of airmen from US Air Forces in Europe (USAFE) and NATO partner nations.

Thanks in part to system modernization in recent years, these in-place forces are looking good. F-15Cs and Ds from Bitburg AB, Germany, and Camp New Amsterdam in the Netherlands would provide potent air defense in the NATO center. Conversion to F-16s at Hahn AB, Germany, was completed in 1982. A-10s are now at RAF Bentwaters and Woodbridge in the UK, but would deploy forward in wartime. The veteran F-4 is still effective. USAFE’s electronic combat capability will be significantly enhanced around the end of this year when EF-111A tactical jamming air-

USAFE IN THE DANGEROUS DECADE

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craft are stationed at RAF Upper Heyford. The F-111Es and Fs based in Great Britain can operate around the clock in any weather. They are heavily committed to long interdiction and strike missions.

Allied airmen are flying some impressive equipment too, such as the multinational, multirole Tornado, which can be outfitted to dispense cluster munitions against mobile targets. Enhancing the effectiveness of tactical air forces in Europe is the E-3A Airborne Warning and Control System aircraft flying out of the NATO air base at Geilenkirchen in Germany, where the first multinational crews have been assembled. Four NATO E-3As are now on station, and the plan is to have eighteen operational by 1985.

USAFE squadrons are keenly aware of the responsibility that would fall to them in the forefront of a European conflict. They work steadily on their ability to generate sorties and keep runways open. They practice their wartime routines in bulky clothing and equipment that offers some protection from chemical attack. Combat training is more realistic than ever, and teamwork with allies and US ground forces receives constant emphasis.

USAFE F-15s and F-16s are better than anything the Soviets can put up against them, and are likely to remain better for the next several years.

An A-10 from RAF Bentwaters taxis out at Sembach AB, Germany, during an Autumn Forge exercise, Carbine Fortress, last September. (USAF photo by Ken Hackman)
years. In the overall conventional force balance, though, the Pact—which has long had the advantage in sheer numbers—has been closing the quality gap. The mobility and firepower of Soviet ground forces have increased greatly. The time is long gone when Soviet tactical airpower consisted chiefly of limited-range day fighters. The current generation of aircraft has significant range and increased night and bad weather capability. The next generation will be even better.

NATO may soon face the unenviable prospect of an enemy who is technologically equal as well as numerically superior. On both sides of the Atlantic, defense planners are concluding that once war begins, they cannot allow these strengthened enemy forces to keep the option of bringing the war to the West.

US doctrine in this regard is reflected in a new operational concept called Joint Attack on the Second Echelon—or J-SAK—in which the Air Force and the Army would work together to disrupt, delay, and destroy the enemy's capability for continuous operations by altering the momentum of his attack.

A prime target under this concept would be enemy armor moving up but not yet in the fight. These reinforcements would be hit from both the air and the ground in a coordinated effort. If they can be broken up, the Soviet strategy of punching through with successive echelons will be defeated.

Operating against the enemy's rear, however, calls for major strides in target acquisition and for munitions tailored to the purpose. The Joint Surveillance and Target Attack Radar System (Joint STARS) is being developed by the Air Force and the Army for long-look target detection, tracking, and weapon guidance. Target-hunting drones are another possibility.

The Air Force is working on a number of weapons for use against armor, and is also looking toward the possibility of attacking enemy airfields—a job for which it currently has no effective munition. A first step toward that capability is purchase of the French Durandal runway-cratering munition. Several other weapons, among them cratering submunitions, are in progress. Acquisition of glide bombs and standoff attack weapons will add to the ability of US tactical air to hit fixed point targets in the enemy's rear—including various facilities at Pact air bases—which would at minimum put a hitch in the rhythm of sortie production.

USAFE eagerly awaits the availability of the LANTIRN navigation and targeting pods. At present, long winter nights and foul weather in Europe severely restrict the hours when ground-attack missions can be flown. LANTIRN pods will make it possible to conduct such operations in darkness and under weather.

Air Base Survivability

USAFE must anticipate that its own bases will be hit—or at least targeted. Protection of air bases is an Army responsibility, but in recent years the Army has neglected point defense in favor of area defense. To the Army's displeasure, the Air Force is acquiring British Rapier missiles, to be manned by the RAF, for defense of its air bases in the United Kingdom. Unless the Army shows more interest in meeting its responsibilities, a similar ar-
F-15Cs from Camp New Amsterdam in the Netherlands fly a training mission over northern Europe. In the opening battle of a European conflict, USAFE F-15s would provide potent air defense in the NATO center and would be crucial to allied control of the air.

Arrangement may be made for defense of USAFE bases in Germany, probably with the German-French Roland system.

Dispersal and collocated operating bases are at a premium in Europe (see p. 54), so USAFE is working hard on ways to put a cratered runway back in use quickly.

At Ramstein AB, Germany, local civil engineers and a Red Horse team from RAF Wethersfield demonstrated recently that concrete slabs instead of conventional aluminum matting can be used to patch runways. In early December, more than fifty NATO engineers and logisticians watched as the team repaired a simulated crater, measuring twelve by sixteen meters, on the Ramstein ramp in four hours. In another demonstration in January, a slab repair held up nicely when an F-4E rolled across it. The slabs cost less than $3 a square foot, compared to about $25 a square foot for the AM 2 aluminum matting that USAFE has been stocking to fix battle-damaged runways.

The technique is a modification of a method the West Germans and the Swiss have used for several years.

First, high-speed concrete saws cut a square or rectangle around the damaged area. The crater is filled with rocks and gravel, then capped with the slab. Machines do the heavy work. People do most of the lifting when matting repairs are made, and it is grueling labor, especially if they must wear chemical protection gear. Ten people can make a slab repair that would require twenty-seven people if matting were used. The matting has to be prestocked and stored, whereas the slabs are manufactured locally and can be used for assorted paving jobs around the base. Forklifts easily shuttle the slabs to where they are needed.

At present, USAFE's aircraft are extremely vulnerable to attack while refueling from trucks or at hot pits. To reduce the exposure of both aircraft and trucks, in-shelter refueling methods have been devised. A prototype system is in operation at Spangdahlem AB, Germany.

It consists of a buried pipeline loop leading into aircraft shelters, with isolation valves to limit the damage if the pipeline is cut. Tests conducted last year at Tyndall AFB, Fla., demonstrated that buried pipelines can withstand all but direct hits. USAFE hopes to install the first full-scale system at Bitburg, and is urging that in-shelter refueling be adopted as a NATO standard.

An additional aspect of air base vulnerability is the high degree of terrorist activity in western Europe. Infiltrators managed to explode a bomb in USAFE headquarters at Ramstein in August 1981. Less than a month later, a vehicle carrying an Army general was rocketed in Heidelberg. US installations and citizens are preferred targets for the terrorists. With attacks against the military on the increase, USAFE security procedures have been stepped up.

Sortie Generation

An improvement in sortie rates is almost as good as having additional airplanes.

Some of the sortie figures USAFE is now posting can be laid to the command's modernized fighter fleet. Fighter aircraft averaged one combat mission every four days in World War II, one every three days in Korea, and nearly one a day in Vietnam. Surge tests with F-15s in Europe have demonstrated rates of better than four sorties a day.

Part of the credit, however, goes to the production-oriented maintenance concepts now in use and to

OV-10 forward air controllers from Sembach AB, Germany, work in teams to find targets and direct attack aircraft onto them.
Civil engineers in full chemical ensemble practice rapid runway repair during an exercise at Hahn AB, Germany. A new technique for getting battle-damaged runways back into action employs concrete slabs instead of aluminum matting, a cheaper approach that requires less human labor.

the determined efforts of USAFE maintenance crews.

The newest wrinkle in USAFE maintenance is called Aircraft Battle-Damage Repair (ABDR), a concept pioneered by the RAF and said to have been proven during last year's war in the Falklands. Self-supporting repair kits, mounted on trailers, would contain everything needed to fix a battle-damaged fighter to the extent that it could fly at least one more sortie. These mobile units could be wheeled from one semihardened shelter to another, airlifted, or even taken to emergency landing strips on the German autobahn. The trailers would have their own power generators.

Thus far, USAFE is the only Air Force command working toward such a capability to augment conventional maintenance operations. ABDR manuals are already out for the F-4 and F-5, and manuals for the A-10, F-111, and F-16 will be available by next year.

Allied Teamwork

The most spectacular example of Alliance cooperation is the annual Reforger exercise, during which US units deploy from Stateside to demonstrate their ability to reinforce western Europe. Air Force crews get to know their bed-down bases, fly in multinational operations, and gain experience with local weather and terrain.

Less noticed are the cooperative ventures going on year-round between USAFE and allied air forces.

Combined training doesn't get much better than the Tactical Leadership Program (TLP) conducted eight times a year by NATO's Allied Air Forces Central Europe at Jever AB in northern Germany. Each session runs for four weeks. (See "You Fight Like You Train," December '80 issue, p. 44.)

Each nation selects its top performers to go, and competition is keen. Aircrews get a concentrated week of seminars on the threat, allied capabilities, doctrine, tactical leadership, and interoperability. The other three weeks are mostly flying. Each crew gets fifteen sorties alongside airmen from other NATO nations. A-10s, Harriers, F-15s, F-4s, FGR-2s, Alpha Jets, Lightnings, Mirages, Jaguars, and F-104s work together in a variety of missions. The combat training is as realistic as possible, but does not extend to live firing. (In general, NATO air forces get in less actual shooting than do the Soviets and the Pact.)

Five nations—the United States, Belgium, Germany, the Netherlands, and the United Kingdom—send aircraft and crews to TLP regularly. Canada, France, Denmark, and Norway have taken part at times, and Turkey and Greece have sent observers. Future TLP courses will involve the NATO AWACS, and the first appearance of the Tornado is expected soon.

In 1982, every USAFE fighter wing participated. This year, forty-two USAFE aircraft, including the F-16 for the first time, will be going to Jever.

There is good progress in a different dimension of cooperation: cross-servicing of aircraft that have to divert from their home bases on the way back from a combat mission. This program, begun in 1978, provides for them to refuel and rearm—or get fresh film in the case of reconnaissance aircraft—and not lose a sortie. USAFE aircraft can be handled at selected allied bases, and USAFE bases offer the same service to allied airplanes diverting their way.

Stage A servicing is refueling only; Stage B includes rearming and film reloading as well. Currently, USAFE can service ten different allied aircraft at its main operating bases, and eight types of US aircraft can be accommodated at allied bases in six nations. Five types of US aircraft can be serviced at dissimilarly equipped USAFE bases.

Turkey, Italy, and Norway were originally cool to the whole idea, but have recently expressed interest, although they have reservations about Stage B cross-servicing.

When an airplane diverts for cross-servicing, the Allied Tactical Operations Center (ATOC) will feed its next target to the receiving base, where a decision is made in conjunction with the aircrew on which of the available munitions will be loaded.

ATOC Interoperability

The ATOCs themselves will be working together more smoothly now that the EIFEL 1 command control and information system is in operation at USAFE's ATOC at Sembach AB, Germany. It is a high-
Map study is part of the course for NATO pilots and forward air controllers at the Air Ground Operations School at Sembach AB, Germany.

speed automated system, replacing manual procedures for planning tactical air requirements and matching them up with available sorties.

It provides a computer-to-computer interface with EIFEL 1 systems already in the two German ATOCs, Kalkar and Messtetten. The British, Dutch, and Belgian ATOC at Maastricht in the Netherlands will be getting EIFEL, too, which will standardize the ATOCs in the Central region.

EIFEL (the German acronym is for Electronic Information Command and Control System for the Luftwaffe) was developed by the Germans. USAFE adopted it as the quickest and most economical way to automate its air tasking. An added feature of the system is that the host computer at Sembach will share combat information with terminals at other USAFE bases.

Manual ATOC operations are no longer flexible and efficient enough to handle the requirements for tactical airpower that would flood in during wartime, to assign sorties and weapons against those needs, and to monitor execution of the orders. Not every seemingly sensible cooperative venture is readily adopted, though.

Some days the troops in Europe must wonder if the folks back home understand the problem. A year ago this month, West Germany agreed to a wartime plan under which it would pay to mobilize 93,000 Reservists to support US forces if the US would pay for the equipment. Of the total, 27,000 of those Reservists would assist USAFE in air base security, airfield damage repair, collocated operating base augmentation, and medical evacuation. By some estimates, the proposal would cost the US one two-hundredth as much as bringing people and equipment from the States—but as this article went to press, Congress still had not funded the program.

The Most Dangerous Decade

Despite some improvements and new systems, the conventional military situation in Europe has been going downhill for the West. That, in turn, lowers the nuclear threshold and increases the possibility that NATO would have to resort to nuclear weapons early in a conflict or be defeated. Concurrently, the Soviets are doing well in their propaganda war to block upgrading of NATO's nuclear deterrent while continuing to deploy SS-20 medium-range nuclear missiles at an alarming rate.

Adequate conventional forces cannot eliminate the need for a nuclear deterrent, but they can raise the nuclear threshold and make war of any kind less probable.

The technology—particularly in target acquisition and munitions—is emerging to add muscle to NATO squadrons. Since the Alliance is pledged not to fire the shot that would open a war, any conflict would begin at the time and place of the enemy's choosing. That defensive strategy places a heavy burden on the flexibility of airpower.

This is already Europe's most dangerous decade since the Alliance was formed—and it could get even more dangerous before it's over.